REMARKS

Reconsideration of the application is requested.

The applicants affirm their earlier election. Non-elected claims 17-19 have been canceled without prejudice to a divisional filing.

The objection to the drawing has been noted. Corrections will be duly made.

An abstract has been provided.

The specification has been amended to include a brief description of the drawings.

An introduction to the claims has also been provided.

The claims have been amended to obviate the Examiner's rejection under Section 112, 2nd ¶. The term "affinity-related manner" has been deleted in favor of alternative description which is clear and amply supported by the applicants' disclosure.

The term SPR has been replaced by the phrase Surface Plasmon Resonance, as suggested by the Examiner.

Claim 4 has been canceled as unnecessary and the term "relatively loosely" has been deleted from claim 7.

Claim 8 has been amended to delete the parenthetical example. The deletion has been made the subject of new claim 22.

The Examiner is requested to reconsider the objection to the use of the term "electrochemical properties" in claim 12. The applicants respectfully submit that the term "electrochemical properties" is clear and definite as used by the applicants in claim 12. Those in the art would fully understand what

the term means. In support of their position, the applicants attach a copy of an extract from the Shorter Oxford English Dictionary, which defines "electrochemical". The electrochemical properties of a molecule are well understood to those skilled in the art. Accordingly, the Examiner is requested to withdraw the objection to the use of this language in claim 12.

The Markush group of claim 16 has been duly amended in view the Examiner's objection thereto.

Reconsideration of the Section 102(b) rejection of claims 1-4, 7-10 and 13-16 as anticipated by Schramm et al (WO 91/05262) is requested. The reference does not anticipate the applicants' invention as defined by the rejected claims.

The Examiner's rejection is apparently based on his view that applicants' claim 1 uses "open" language and does not exclude other reagents or steps (page 6 of the Action, ¶ 9). However, the Examiner appears to have overlooked the limitation explicit in claim 1 that "the displaceable moiety cannot generate the signal which is detected in the assay unless and until the displaceable moiety is captured on the second surface". WO 91/05262 does not disclose a method which meets this limitation.

WO 91/05262 is discussed in the applicants' specification (see pages 1-2, and especially page 2, 1st full ¶). Thus, the fluorescent or enzyme labels taught by WO 91/05262 are inherently capable of providing the assay signal, regardless of where the displaceable moiety is located within the assay system. In contrast, in the present invention, the assay signal can be generated only when the displaceable moiety has been captured at the

second surface. This is neither taught nor suggested by WO 91/05262. Accordingly, withdrawal of the Section 102(b) rejection is requested.

The Examiner has also rejected claims 1-16 under Section 103(a) as being obvious from the combination of EP 0416730 with either of WO 91/05262 or WO 92/18867. See ¶s 11, 12 of the Action. There is no motivation to consider the references together as the Examiner has done in an effort to reach the applicants' invention. However, even if the references are considered together, the applicants' invention is not obvious.

With respect to EP 0416730, the applicants acknowledge that mass biosensors are well known. The disclosure of EP 0416730 is limited to teaching a more efficient manner of coating a measurement surface of such biosensors, by providing an intermediate layer (such as avidin) between the measurement surface (such as a piezoelectric crystal) and the reagent-specific binding agent (e.g. a biotinylated antibody). Thus, in general, EP 0416730 discloses none of the method steps recited in the present claims.

The assay systems described in EP 0416730 are very different to those contemplated in WO 91/05262. Thus, in WO 91/05262, it is a fundamental requirement that a signal is capable of being generated at both a first and a second surface - the location of the signal, or the relative amount thereof at the respective surfaces, providing a semi-quantitative indication of the presence of analyte in a sample under test (see, e.g. page 7, lines 9-15). WO 91/05262 teaches that the signal is preferably generated by the "group consisting essentially of enzymes, fluorescent molecules, ultraviolet absorbent agents" and "other compounds capable of conjugation to the analyte without

deletion of the capacity to generate the signal" (page 9, lines 10-14), although these latter compounds are not exemplified in any way. Thus, the displaceable moiety must comprise a label of the conventional sort.

The disclosure of EP 0416730, in contrast, contemplates only a single "measurement surface", does not contemplate the use of a labeled, displaceable moiety, and cannot be used to provide a different signal at different locations. In short, the objectives and techniques disclosed in the respective documents are so disparate that the person skilled in the art would not contemplate attempting to combine their teachings. The motivation for such combination suggested by the Examiner is "to reduce steps and reagents by elimination having to label the detectable moiety with a fluorescent, luminescence or radioactive tag" (page 8 of the Action). With respect, this is not a statement made in any of the prior art documents. The motivation relied on by the Examiner does not appear to be taught by the prior art but is in fact a result of *ex post facto* analysis.

Moreover, the Examiner states that "from the teachings of the references . . . one of ordinary skill in the art would have had a reasonable expectation of success . . . because Tom-Moy et al teach that detecting modulation of acoustic waves reduces the user time required to customize the measurement surface". With respect, this is not what Tom-Moy et al teach. The abstract states that the reduction in user time required to customize the measurement surface results from the "two-phase method of chemically modifying the measurement surface", not from detecting the modulation of acoustic waves as erroneously suggested by the Examiner.

Accordingly, the applicants submit that the claims are not obvious from EP 0416730 and WO 91/05262. Withdrawal of the Section 103(a) rejection based on these references is, therefore, in order and is requested.

The Examiner is also requested to reconsider and withdraw the Section 103(a) rejection of claims 1-16 based on EP 0416730 (Tom-Moy et al) and Garland (WO 92/18867).

These references, even if considered together when there is no art motivation to do so, do not make the applicants' invention obvious.

As noted above, the disclosure of Tom-Moy et al is not generally relevant to the present invention, most of the features of the present claims not being disclosed therein. WO 92/18867 teaches an assay method in which the use of SPR is an essential feature. SPR is not taught or suggested by Tom-Moy et al and it is not seen why the person of skill in the art would, therefore, combine the respective documents. As for the "motivation" and "reasonable expectation of success" suggested by the Examiner, the applicants' comments above are equally applicable here.

Further, as discussed in the applicants' specification (at page 3), WO 92/18867 does not teach a method in which the displaceable moiety is displaced by analyte in an "affinity-related" manner, as required by the present claims. Hence, even if WO 92/18867 and Tom-Moy et al are combined, the applicants' invention does not result.

Favorable reconsideration with allowance is requested.

Respectfully submitted,

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APPENDIX

Version with Markings to Show Changes Made

IN THE SPECIFICATION

An Abstract of the Disclosure is attached.

IN THE CLAIMS

Claims 4 and 17-19 are canceled.

The claims are amended as follows:

1. (Amended) A method of detecting the presence of an analyte of interest in a sample, the method comprising the steps of: providing a first surface having reversibly immobilised thereon a displaceable moiety, the displaceable moiety being immobilised on the first surface with an affinity lower than that of the displaceable moiety for the analyte of interest; exposing the first surface to a sample comprising the analyte of interest, the analyte of interest specifically displacing the displaceable moiety from the first surface [in an affinity-related manner]; causing the displaceable moiety displaced from the first surface to contact a second surface bearing a capture moiety which specifically binds to the displaceable moiety, so as to capture the displaceable moiety on the second surface, said capture generating a detectable signal; and detecting the signal; wherein said detection is performed by means other than [SPR] Surface Plasmon Resonance, and wherein the displaceable

moiety cannot generate the signal which is detected in the assay unless and until the displaceable moiety is captured on the second surface.

7. (Amended) A method according to claim 1, wherein the first surface comprises a plurality of intervening molecules which bind [relatively loosely] to the displaceable moiety, such that the binding affinity of the intervening moiety for the analyte of interest is greater than that of the displaceable moiety for the intervening moiety.

8. (Amended) A method according to claim 7, wherein the intervening molecule is an analogue [(e.g. mimotope)] of the analyte of interest.

16. (Amended) A method according to claim 1, wherein the analyte of interest is selected from the group consisting of steroid hormones, protein hormones, nucleic acids, peptides, bacterial [or] and viral antigens, and immunoglobulins.

New claim 22 is added.